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CITY CLERK

Indiana Water and Sewer Utilities Comparative Rate Studies

Enclosed are your complimentary copies of our 2016 Umbaugh Comparative Water and Sewer Rate studies. The studies, which include over 350 communities, are one of the most comprehensive studies available in the state.

We update this information periodically to provide a near real-time reflection of water and sewer rates charged by Indiana municipalities. Aging facilities that need replacement, reduced grant funding, implementation of long-term control plans, unfunded mandates, expanded environmental regulations and increases in operating expenses combine to pressure utility rates upward and these studies give an immediate picture of present costs. Elected officials and professional utility managers use this data as a benchmark of how their rates compare to other communities.

The 2016 studies are comprehensive and reflect rates and charges as of the first of the year. Based on our years of experience in performing rate studies in Indiana we feel it is part of our professional responsibility to provide this information.

To ensure these studies are as comprehensive as possible, we invest a lot of time to include information from all sizes of communities. As a result, the studies reflect the majority of municipal water and sewer rates across the state. The data is broken out by population. Additional information by locality is available upon request.

Umbaugh is one of the largest and most active independent municipal advisors to governmental units and utilities in Indiana.

We hope that you find these reports informative and useful in your endeavors. If you have any questions or if we can be of assistance in this or other matters, please do not hesitate to contact us via e-mail at ratestudy@umbaugh.com.

Very truly yours,

UMBAUGH

Indiana Comparative Rate Study

Sewer

January 2016

Prepared by



In cooperation with





To the Reader:

This report summarizes a study of rates and charges for sewage treatment by many municipally owned systems in Indiana. The study is based upon information provided by municipal utilities as of December 2015.

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Preface

Umbaugh has been a leader in municipal advisory services for governmental entities in Indiana for more than 65 years. As one of the largest and most active independent municipal advisors and rate consultants to governmental units in Indiana, Umbaugh is uniquely qualified to provide this analysis of municipal sewage rates and charges.

This report covering 370 communities is our most extensive survey to date. We acknowledge the extra efforts and cooperation of the Mayors, Clerk-Treasurers, Office Managers and Billing Clerks throughout the state who took the time to provide us with the rate information for their communities.

Although this study required many hours of research, compilation and data analysis, we at Umbaugh are happy to provide it because we feel it is a vital resource to local government decision-makers around the state. Accurately comparing local rates and charges with those of similar utilities is an important tool to assist utility managers and decision makers. From our perspective, it is interesting to periodically evaluate what, in many cases, is the result of our work. This analysis allows us to better determine the issues facing local governments and how best to solve them.

General Information

Please note that all volume statistics in this report are stated in gallons. The majority of municipal systems record meter readings based on gallons used. For conversion purposes, a per-one-hundred-cubic-foot price should be multiplied by 1.333 to obtain a per-one-thousand-gallon price.

Example:

Charge per 100 cubic feet	\$ 0.75
Times conversion constant	<u>x 1.333</u>
Charge per 1,000 gallons	\$ 1.00

Similarly, the number of cubic feet of water multiplied by 7.5 yields the volume of water in gallons.

Example:

Number of cubic feet	175
Times conversion constant	<u>x 7.5</u>
Number of gallons	1,313

The following briefly explains some of the basic characteristics of rate structures and the terminology used in this report. Charges to customers are of five general types:

1. Metered Rates

Metered Rates are based on water consumption. In general for utilities in the Midwest, as the volume of usage increases (gallons or cubic feet), the price per unit (usually thousands of gallons or hundreds of cubic feet) decreases. The "rate brackets" and pricing might appear as follows:

First	3,000 gallons per month -	\$7.00 per 1,000 gallons (1)
Next	7,000 gallons per month -	\$6.50 per 1,000 gallons
Next	20,000 gallons per month -	\$5.25 per 1,000 gallons
Next	70,000 gallons per month -	\$3.95 per 1,000 gallons
Over	100,000 gallons per month -	\$3.15 per 1,000 gallons (2)

For purposes of this survey (1) is the "first bracket price" and (2) is the "last bracket price."

2. Base and Flow

A Base Charge or Service Charge is a fixed monthly amount that is usually determined by a customer's meter size. Normally the base charge is designed to recover costs of serving each customer, such as meter reading and billing as well as a portion of the collection system costs. For sewer systems, a base charge is normally coupled with a treatment rate (flow rate). The flow rate is normally a single rate per unit designed to recover the cost to treat the sewage, including debt service on the wastewater treatment plant. This type of rate structure might appear as follows:

Meter Size	BaseCharge
5/8" - 3/4"	\$10.00 per month
1"	\$25.00 per month
2"	\$85.00 per month
4"	\$365.00 per month

Plus a treatment flow charge of \$7.00 per 1,000 gallons.

For purposes of this survey the "first bracket price" and the "last bracket price" would be the same. In this example: \$7.00 per 1,000 gallons.

3. Minimum Charge

A Minimum Charge is similar to a base charge in that it is typically a fixed amount based on meter size. A minimum charge, however, includes a certain level of flow for which the customer is billed whether they use the water or not. For example, a typical minimum charge might be \$20.00 for any level of flow from 0 gallons through 3,000 gallons. Minimum Charges are not as common with sewer utilities as they are with water utilities.

4. Flat Rates

"Flat rates" are based on estimated consumption of water and are used where metered water usage is not available. An example of a flat rate system follows:

Single family residence \$40.00 per month

Apartment complex \$30.00 per unit/month

Laundromat \$30.00 per washer/month

School \$1.75 per student/month

This report includes rate schedules and charges from all of the types detailed above.

Disclaimers

In our work around the state, we are frequently asked how a community's sewer rates compare to those in the next community. It is natural that both government officials and citizens ask this question, and this report will help answer that question. This report and the question it answers, however, do have limitations. Comparing a residential bill for 5,000 gallons of monthly water usage between two different utility systems tells you what a customer on each system pays for the same amount of water usage. But comparing the bills for similar customers on two different sewer systems doesn't tell the complete story. Differences in operating characteristics, staffing, customer makeup and usage levels and many other factors all impact the utility's cost structure and therefore its rate structure as well. In addition, the type of ownership impacts the operating cost and rate structure. In many cases, user rates for privately held investor-owned utilities are higher than the rates for municipally owned utilities because of the need to provide for shareholder return and taxes. Without taking these factors into consideration, the user could reach incorrect conclusions regarding the differences in customer billings for the same amount of water usage from one utility to the next.

As we mentioned previously, preparing this report requires collecting and analyzing large amounts of rate data that to some extent is in a perpetual state of change. The information contained in this report is as accurate as we are able to make it as of the data collection cut-off date.

Comparison of Rates and Charges from October 2011 to December 2015 Monthly Billings

As we discuss in more detail on the next page, much has changed over the past few years concerning sewage rates in the state of Indiana. On average, sewer rates and charges have

increased approximately 22% over the last four years since our prior study. There are a multitude of reasons for this outcome, including increases in operating expenses, declining customer usage due to conservation or rate fatigue, and the number of capital improvement projects completed over the past four years. The cost of capital improvement projects is generally the biggest driver impacting rates and charges. Communities

On average, sewer rates and charges have increased approximately 22% over the last four years.

undertake these projects for a variety of reasons. Certainly, the relatively low cost of obtaining debt financing and the replacement of aging infrastructure has spurred capital spending. Utilities are continually faced with unfunded government mandates and regulations, such as stormwater separation and the Clean Water Act. Many communities began implementing projects required to remediate combined sewer overflows in recent years and those who have addressed this issue are experiencing a burden on sewage rates and charges to offset the costs of these projects. Finally, many utilities have expanded treatment facilities to accommodate customer growth.

From October 2011 to December 2015 Monthly Billings

	October 2011 Average	December 2015 Average	Percent Increase
First bracket price (per 1,000 gallons)	\$5.76	\$7.06	22.6%
Last bracket price (per 1,000 gallons)	\$4.57	\$5.63	23.2%
Gallons given for minimum price	2,670.00	2,617.00	-2.0%
Minimum charge for 5/8"meter	\$19.53	\$24.72	26.6%
Monthly bill based on 2,000 gallons usage	\$23.57	\$28.78	22.1%
Monthly bill based on 3,000 gallons usage	\$27.31	\$33.33	22.0%
Monthly bill based on 4,000 gallons usage	\$32.01	\$39.12	22.2%
Monthly bill based on 5,000 gallons usage	\$37.28	\$45.29	21.5%
Monthly bill based on 10,000 gallons usage	\$60.90	\$74.80	22.8%

⁼ Approximate single-family residential average.

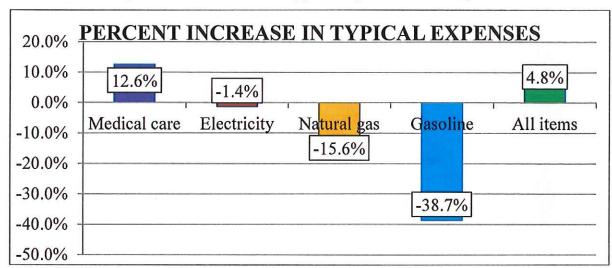
Comparison of Expenses from August 2011 to December 2015

Since we issued our last Comparative Rate Study in January 2012, the world has seen dramatic changes affecting the day-to-day operations of the communities in which we live. Indiana and the country have mostly recovered from the economic downturn due to the financial market "meltdown" in 2008. Most of the projects funded with grants and low interest loans from the American Recovery and Reinvestment Act of 2009 are now complete.

In the coming years and for the foreseeable future many Indiana communities will be embarking on their largest infrastructure projects ever as they spend millions of dollars on combined sewer overflow remediation projects. These projects will mostly be funded with Sewage Works revenue bonds supported by user rates. As such Indiana communities will likely see larger rate increases than we have seen in the past.

Local governments are also faced with increases in expenses. For example, communities are continuing to report significant increases in the cost of employee health insurance and normal increases for employee wages which account for a large portion of a utility's operating expenses. Recently we have seen significant decreases in gasoline prices and also a slight reduction in electricity prices this past year after many years of increases over the past 10 years for Indiana communities. These increases -- coupled with the increases associated with improvement projects and decreases in consumption -- have contributed to the 22% increase in sewer rates and charges throughout the state.



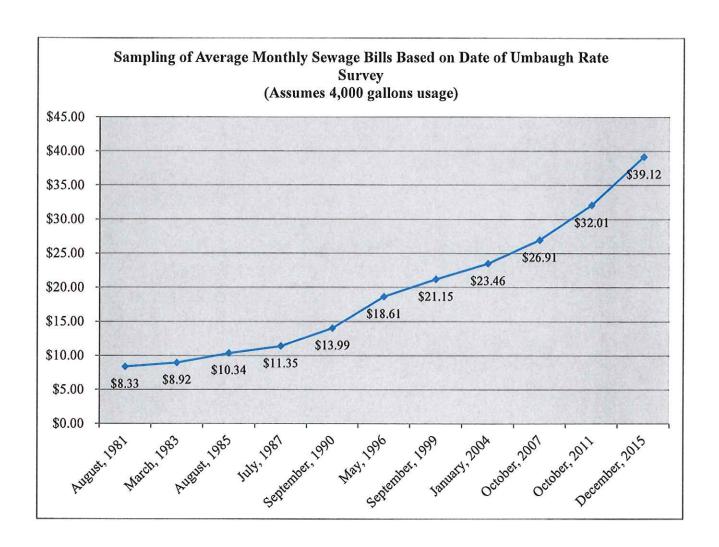


^{*}Source data comes from the Bureau of Labor Statistics website (www.bls.gov).

Indiana Comparative Sewer Rate Study Schedule of Average Rates Based on Date of Umbaugh Rate Studies

The chart below compares the average data derived from the past 11 rate surveys covering the last 34 years withthe data compiled as part of the new January 2016 survey.

A residential bill of 4,000 gallons increased 22.2% from October 2011 to December 2015 and 369.6% since 1981.



Schedule of Rate Variances and Averages

The schedule below shows the pricing variances of several common rate components. The comparison includes the lowest, average and highest prices as determined from the study data. As expected there are large variances in what municipal systems charge for sewage treatment and disposal services. These variances are, in part, attributable to factors such as population, geographic location and the number of years the rates have been in effect. Each of these factors will be explored later in this report.

The price per thousand gallons in the first bracket varies from \$1.13 to \$25.34 per thousand gallons, approximately 22 times as much as the lowest price. The monthly billing for 4,000 gallons of water, which is often considered to approximate average household usage, varies from a per-month low of \$12.00 to a high of \$87.00.

The chart below summarizes our findings for sewage rate information across the state of Indiana.

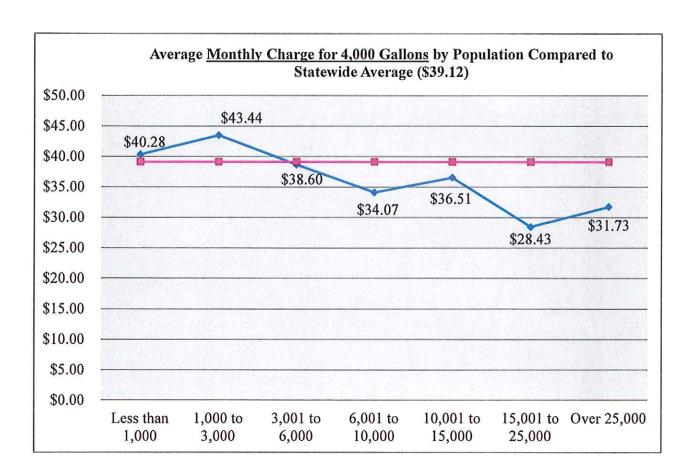
Sewer Rate Variances and Averages

	N	Monthly Billing				
	Minimum Charge	Average Charge	Maximum Charge			
First bracket price (per 1,000 gallons)	\$1.13	\$7.06	\$25.34			
Last bracket price (per 1,000 gallons)	\$0.50	\$5.63	\$18.45			
Gallons given for minimum price	1,000	2,617	10,000			
Minimum charge for 5/8"meter	\$7.56	\$24.72	\$73.80			
Base charge 5/8" meter	\$0.62	\$16.10	\$56.38			
2,000 gallons	\$8.85	\$28.78	\$87.00			
3,000 gallons	\$10.53	\$33.33	\$87.00			
4,000 gallons	\$12.00	\$39.12	\$87.00			
5,000 gallons	\$12.00	\$45.29	\$108.90			
10,000 gallons	\$12.00	\$74.80	\$184.50			

Average Statistics by 2010 Population

The graph below shows the correlation between a community's size and its sewer rates and charges. With relatively few exceptions, charges for sewer service generally follow a pattern of higher rates in small communities and lower rates in large communities.

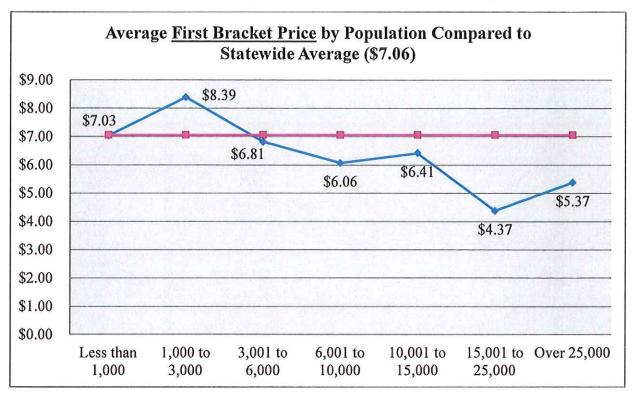
These variations are reasonable when you consider that the cost of operating a utility must be spread over its customer base. A larger customer base means that a smaller portion of the total costs of operation is allocated to each individual customer. In addition, as the volume of treated flow increases, the average cost to treat that flow decreases.

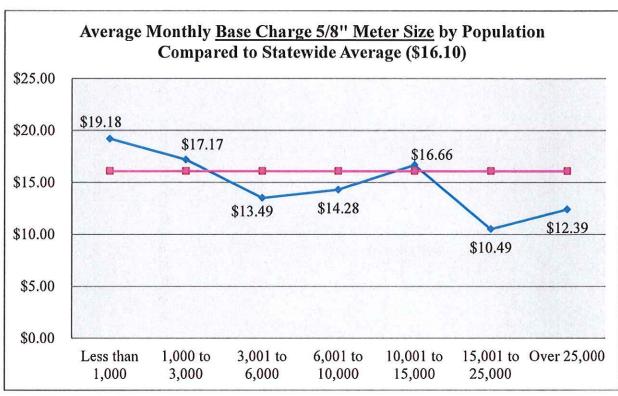


Indiana Comparative Sewer Rate Study Average Statistics Based on 2010 Population Monthly Billings

	Population						
	Less than 1,000	1,000 to 3,000	3,001 to 6,000	6,001 to 10,000	10,001 to 15,000	15,001 to 25,000	Over 25,000
The second secon	103	127	38	30	19	17	36
First bracket price (per 1,000 gallons)	\$7.03	\$8.39	\$6.81	\$6.06	\$6.41	\$4.37	\$5.37
Last bracket price (per 1,000 gallons)	\$5.39	\$6.22	\$5.71	\$5.14	\$5.26	\$4.32	\$5.33
Gallons given for minimum price	2,669	2,452	2,836	2,393	2,978	2,748	2,935
Minimum charge for 5/8"meter	\$27.32	\$24.83	\$23.53	\$22.11	\$24.25	\$13.28	\$24.23
Base charge 5/8" meter	\$19.18	\$17.17	\$13.49	\$14.28	\$16.66	\$10.49	\$12.39
Monthly bill based on 2,000 gallons usage	\$31.99	\$30.80	\$27.67	\$23.29	\$27.87	\$18.99	\$23.36
Monthly bill based on 3,000 gallons usage	\$35.50	\$36.53	\$32.38	\$27.57	\$31.90	\$23.42	\$27.09
Monthly bill based on 4,000 gallons usage	\$40.28	\$43.44	\$38.60	\$34.07	\$36.51	\$28.43	\$31.73
Monthly bill based on 5,000 gallons usage	\$45.30	\$50.83	\$44.93	\$40.62	\$41.27	\$33.45	\$37.71
Monthly bill based on 10,000 gallons usage	\$70.01	\$85.04	\$76.97	\$72.91	\$65.31	\$58.54	\$64.37

See Graphs on previous and next page.



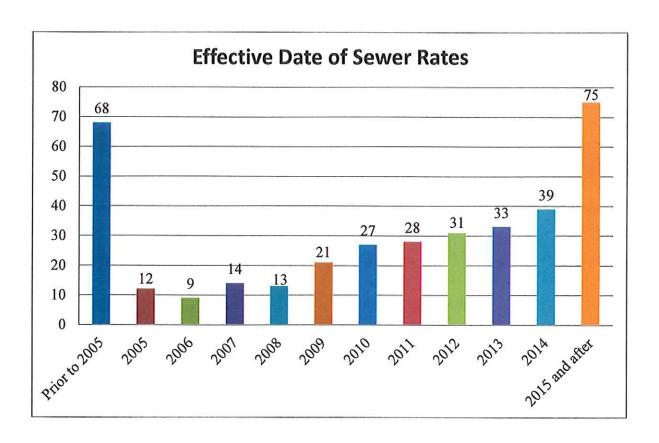


Average Statistics by Effective Date of Current Rates

The following pages examine average charges for service based upon both the current rate structure and size of the community. The first schedule provides statistics for all municipalities sorted by the effective date of the rates adopted.

Sixty eight municipalities are using rates adopted prior to 2005, representing approximately 18% of the communities included in this survey.

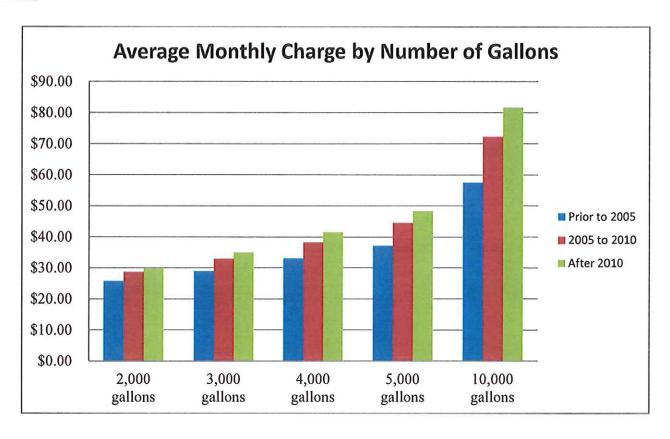
This is important because it indicates these communities will likely experience larger rate adjustments to compensate for normal changes in operating costs that were absorbed over the past 10 years rather than passed on by the utility in the form of minor rate adjustments. Communities should strongly consider an analysis of their rates and charges at least every three to five years.

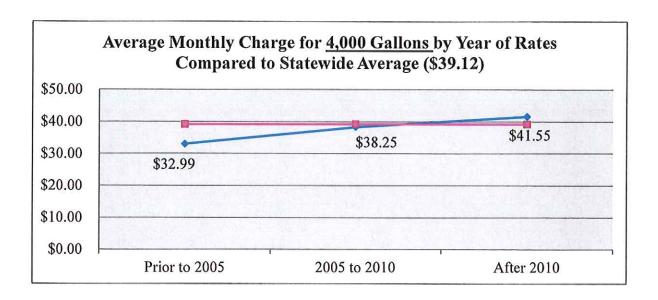


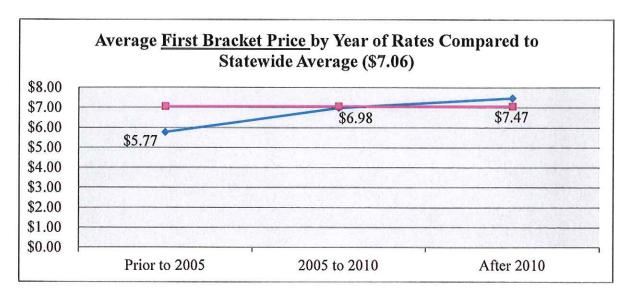
Average Statistics by Effective Date of Current Rates All Populations Monthly Billings

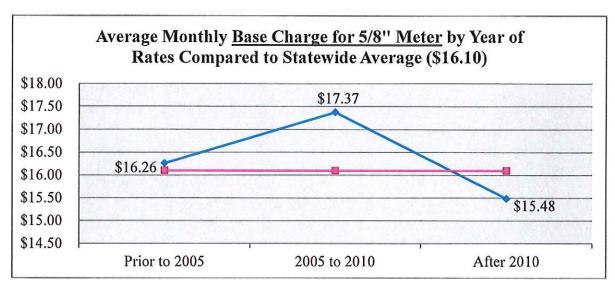
	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	68	96	206	
First bracket price (per 1,000 gallons)	\$5.77	\$6.98	\$7.47	
Last bracket price (per 1,000 gallons)	\$4.59	\$5.27	\$6.09	
Gallons given for minimum price	2,442	2,738	2,613	
Minimum charge for 5/8"meter	\$22.93	\$23.79	\$25.63	
Base Charge 5/8" Meter	\$16.26	\$17.37	\$15.48	
Typical Billings:				
2,000 gallons	\$25.73	\$28.71	\$29.83	
3,000 gallons	\$28.94	\$32.95	\$34.96	
4,000 gallons	\$32.99	\$38.25	\$41.55	
5,000 gallons	\$37.10	\$44.61	\$48.31	
10,000 gallons	\$57.47	\$72.24	\$81.72	

See Graphs on previous and next page.



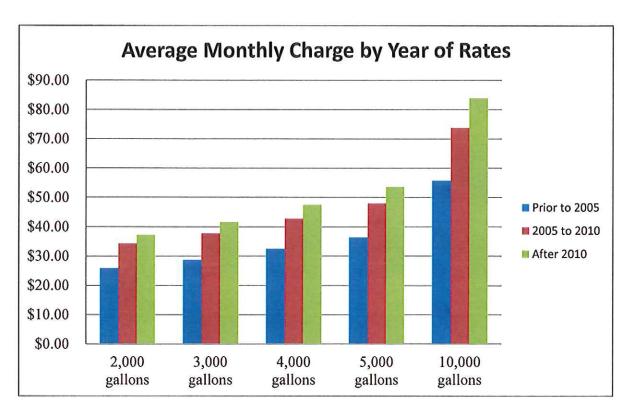






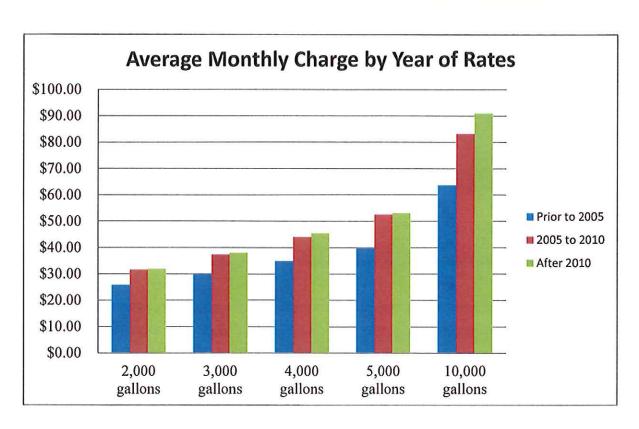
Average Statistics by Effective Date of Current Rates Population less than 1,000 Monthly Billings

	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	40	30	33	
First bracket price (per 1,000 gallons)	\$5.39	\$8.02	\$8.01	
Last bracket price (per 1,000 gallons)	\$4.64	\$5.76	\$5.90	
Gallons given for minimum price	2,453	2,293	3,422	
Minimum charge for 5/8"meter	\$23.52	\$25.55	\$34.45	
Base Charge 5/8" Meter	\$18.56	\$22.51	\$16.87	
Typical Billings:			r diam'r.	
2,000 gallons	\$25.85	\$34.36	\$37.27	
3,000 gallons	\$28.72	\$37.77	\$41.65	
4,000 gallons	\$32.49	\$42.74	\$47.49	
5,000 gallons	\$36.37	\$47.99	\$53.67	
10,000 gallons	\$55.76	\$73.76	\$83.88	



Average Statistics by Effective Date of Current Rates Population 1,000 to 3,000 Monthly Billings

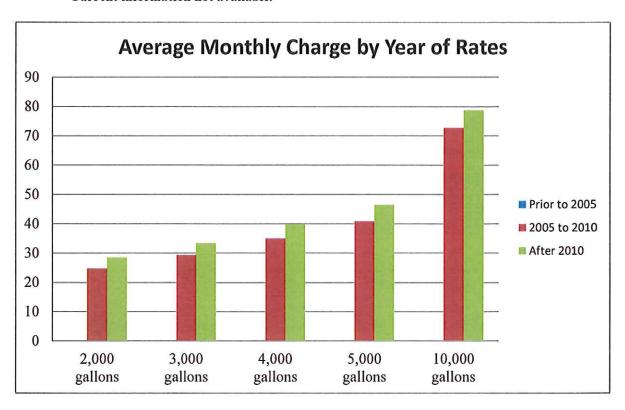
	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	21	23	83	
First bracket price (per 1,000 gallons)	\$6.71	\$8.01	\$8.89	
Last bracket price (per 1,000 gallons)	\$4.78	\$5.44	\$6.77	
Gallons given for minimum price	2,417	2,347	2,483	
Minimum charge for 5/8"meter	\$17.66	\$23.40	\$26.41	
Base Charge 5/8" Meter	\$12.88	\$21.22	\$17.23	
Typical Billings:				
2,000 gallons	\$25.75	\$31.53	\$31.88	
3,000 gallons	\$29.92	\$37.32	\$37.98	
4,000 gallons	\$34.83	\$44.00	\$45.46	
5,000 gallons	\$39.72	\$52.51	\$53.18	
10,000 gallons	\$63.68	\$83.13	\$90.97	



Average Statistics by Effective Date of Current Rates Population 3,001 to 6,000 Monthly Billings

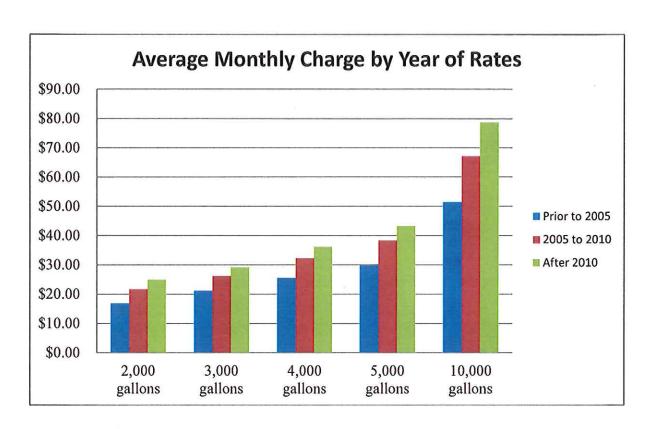
	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	*	11	26	
First bracket price (per 1,000 gallons)	N/A	\$6.37	\$7.12	
Last bracket price (per 1,000 gallons)	N/A	\$4.51	\$6.34	
Gallons given for minimum price	N/A	3,668	2,403	
Minimum charge for 5/8"meter	N/A	\$23.33	\$22.40	
Base Charge 5/8" Meter	N/A	\$12.01	\$13.59	
Typical Billings:				
2,000 gallons	N/A	\$24.79	\$28.49	
3,000 gallons	N/A	\$29.34	\$33.45	
4,000 gallons	N/A	\$35.03	\$39.92	
5,000 gallons	N/A	\$40.79	\$46.54	
10,000 gallons	N/A	\$72.74	\$78.82	

^{*}Current information not available.



Average Statistics by Effective Date of Current Rates Population 6,001 to 10,000 Monthly Billings

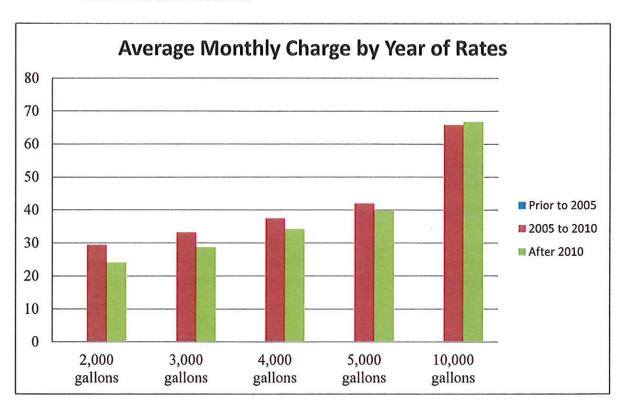
	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	3	8	19	
First bracket price (per 1,000 gallons)	\$3.24	\$5.95	\$6.55	
Last bracket price (per 1,000 gallons)	\$3.24	\$4.25	\$5.85	
Gallons given for minimum price	1,870	2,250	2,530	
Minimum charge for 5/8"meter	\$10.70	\$18.69	\$24.62	
Base Charge 5/8" Meter	\$12.36	\$15.85	\$14.03	
Typical Billings:				
2,000 gallons	\$16.89	\$21.64	\$24.99	
3,000 gallons	\$21.21	\$26.19	\$29.16	
4,000 gallons	\$25.53	\$32.28	\$36.17	
5,000 gallons	\$29.85	\$38.37	\$43.27	
10,000 gallons	\$51.46	\$67.10	\$78.74	



Average Statistics by Effective Date of Current Rates Population 10,001 to 15,000 Monthly Billings

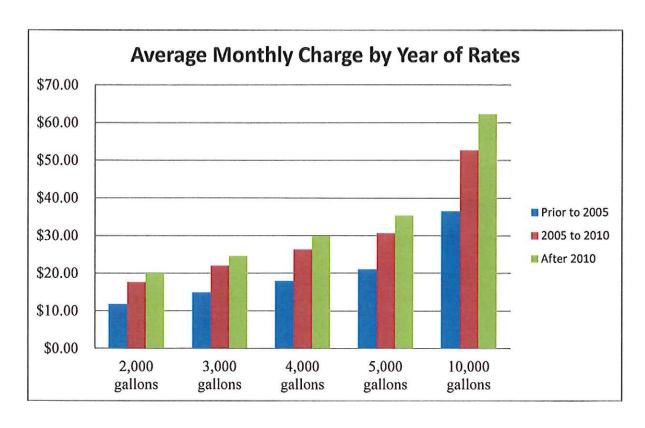
	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	*	9	9	
First bracket price (per 1,000 gallons)	N/A	\$5.87	\$6.04	
Last bracket price (per 1,000 gallons)	N/A	\$5.71	\$4.79	
Gallons given for minimum price	N/A	3,444	2,667	
Minimum charge for 5/8"meter	N/A	\$19.30	\$19.63	
Base Charge 5/8" Meter	N/A	\$17.37	\$15.94	
Typical Billings:				
2,000 gallons	N/A	\$29.40	\$24.10	
3,000 gallons	N/A	\$33.24	\$28.77	
4,000 gallons	N/A	\$37.46	\$34.29	
5,000 gallons	N/A	\$42.00	\$39.80	
10,000 gallons	N/A	\$65.78	\$66.76	

^{*}Current information not available.



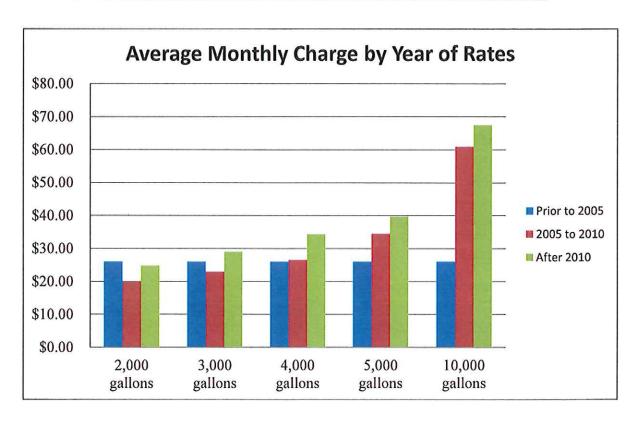
Average Statistics by Effective Date of Current Rates Population 15,001 to 25,000 Monthly Billings

	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	1	4	12	
First bracket price (per 1,000 gallons)	\$3.09	\$4.10	\$4.57	
Last bracket price (per 1,000 gallons)	\$3.09	\$4.10	\$4.49	
Gallons given for minimum price	N/A	N/A	2,748	
Minimum charge for 5/8"meter	N/A	N/A	\$13.28	
Base Charge 5/8" Meter	\$5.57	\$8.81	\$11.79	
Typical Billings:				
2,000 gallons	\$11.75	\$17.58	\$20.07	
3,000 gallons	\$14.84	\$21.97	\$24.62	
4,000 gallons	\$17.93	\$26.36	\$30.00	
5,000 gallons	\$21.02	\$30.74	\$35.39	
10,000 gallons	\$36.47	\$52.67	\$62.33	



Average Statistics by Effective Date of Current Rates Population Over 25,000 Monthly Billings

	Year Current Rates Were Effective			
	Prior to 2005	2005 to 2010	After 2010	
Municipalities in study group	1	11	24	
First bracket price (per 1,000 gallons)	N/A	\$5.67	\$5.24	
Last bracket price (per 1,000 gallons)	N/A	\$5.53	\$5.24	
Gallons given for minimum price	N/A	3,508	2,576	
Minimum charge for 5/8"meter	N/A	\$26.64	\$22.89	
Base Charge 5/8" Meter	N/A	\$8.90	\$13.70	
Typical Billings:				
2,000 gallons	\$26.00	\$19.95	\$24.81	
3,000 gallons	\$26.00	\$22.96	\$29.03	
4,000 gallons	\$26.00	\$26.51	\$34.37	
5,000 gallons	\$26.00	\$34.44	\$39.70	
10,000 gallons	\$26.00	\$60.94	\$67.54	



About Umbaugh

Umbaugh is now in its seventh decade of providing municipal advisory services to local governments, municipal and not-for-profit utilities, school corporations, libraries and a variety of other governmental clients. Our firm has constantly grown to meet this demand and changed with the increasing complexities of public financing, but we remain committed to our initial vision of personal attention, integrity and providing high quality service to each client.

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Investor-Owned Utilities

Libraries

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Indiana Comparative Rate Study

Water

January 2016

Prepared by



In cooperation with





To the Reader:

This report summarizes a study of rates and charges for water service provided by many municipally owned systems in Indiana. The survey is based upon information provided by municipal utilities as of December 2015.

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Preface

Umbaugh has been a leader in municipal advisory services for governmental entities in Indiana for more than 65 years. As one of the largest and most active independent municipal advisors and rate consultants to governmental units in Indiana, Umbaugh is uniquely qualified to provide this analysis of municipal water rates and charges.

This report covering 356 communities is our most extensive survey to date. We thank the Mayors, Clerk-Treasurers, Office Managers and Billing Clerks throughout the state for their extra efforts and cooperation as they took the time to provide us with the rate information for their communities.

Although this study required many hours of research, compilation and data analysis, we at Umbaugh are happy to provide this study because we feel it is a vital resource to local government decision makers around the state. Accurately comparing local rates and charges with those of similar utilities is an important tool to assist utility managers and decision makers. From our perspective, it is interesting to periodically evaluate what, in many cases, is the result of our work. This analysis allows us to better determine the issues facing local governments and how best to solve them.

General Information

All volume statistics in this report are stated in gallons. The majority of municipal systems record meter readings based on gallons used. For conversion purposes, a per-one-hundred-cubic-foot price should be multiplied by 1.333 to obtain a per-one-thousand-gallon price.

Example:

Charge per 100 cubic feet	\$ 0.75
Times conversion constant	<u>x 1.333</u>
Charge per 1,000 gallons	\$ 1.00

Similarly, the number of cubic feet of water multiplied by 7.5 yields the volume of water in gallons.

Example:

Number of cubic feet	175
Times conversion constant	<u>x 7.5</u>
Number of gallons	1,313

The following briefly explains some of the basic characteristics of rate structures and the terminology used in this report. Charges to customers are of five general types:

1. Metered Rates

Metered Rates are based on water consumption. In general for utilities in the Midwest, as the volume of usage increases (gallons or cubic feet), the price per unit (usually thousands of gallons or hundreds of cubic feet) decreases. The "rate brackets" and pricing might appear as follows:

First	3,000 gallons per month -	\$7.00 per 1,000 gallons (1)
Next	7,000 gallons per month -	\$6.50 per 1,000 gallons
Next	20,000 gallons per month -	\$5.25 per 1,000 gallons
Next	70,000 gallons per month -	\$3.95 per 1,000 gallons
Over	100,000 gallons per month -	\$3.15 per 1,000 gallons (2)

For purposes of this survey (1) is the "first bracket price" and (2) is the "last bracket price."

2. Base Charge

A Base Charge, or Service Charge, is a fixed monthly amount that is usually determined by a customer's meter size. Normally the base charge is designed to recover the costs of serving each customer, such as meter reading and billing and does not cover the sale of any water to the customer. These are costs incurred by the utility regardless of the quantity of water used. This type of charge might appear as follows:

Water Meter Size	BaseCharge
5/8" - 3/4"	\$10.00 per month
1"	\$25.00 per month
2"	\$85.00 per month
4"	\$365.00 per month

3. Minimum Charge

A Minimum Charge is similar to a base charge in that it is typically a fixed amount based on meter size. A minimum charge, however, includes a certain level of water usage for which the customer is billed whether they use the water or not. For example, a typical minimum charge might be \$20.00 for any level of consumption from 0 gallons through and including 3,000 gallons.

4. Flat Rates

"Flat rates" are based on estimated consumption of water and are used where metered water usage is not available. An example of a flat rate system follows:

Single family residence \$40.00 per month

Apartment complex \$30.00 per unit/month

Laundromat \$30.00 per washer/month

School \$1.75 per student/month

This report includes rate schedules and charges from all of the types detailed above.

Disclaimers

In our work around the state, we are frequently asked how a community's sewer rates compare to those in the next community. It is natural that both government officials and citizens ask this question, and this report will help answer that question. This report and the question it answers, however, do have limitations. Comparing a residential bill for 5,000 gallons of monthly water usage between two different utility systems tells you what a customer on each system pays for the same amount of water usage. But comparing the bills for similar customers on two different water utilities doesn't tell the complete story. Differences in operating characteristics, staffing, customer makeup and usage levels and many other factors all impact the utility's cost structure and therefore its rate structure as well. In addition, the type of ownership impacts the operating cost and rate structure. In many cases, user rates for privately held investor-owned utilities are higher than the rates for municipally owned utilities because of the need to provide for shareholder return and taxes. Without taking these factors into consideration, the user could reach incorrect conclusions regarding the differences in customer billings for the same amount of water usage from one utility to the next.

As we mentioned previously, preparing this report requires collecting and analyzing large amounts of rate data that to some extent is in a perpetual state of change. The information contained in this report is as accurate as we are able to make it as of the data collection cut-off date.

Comparison of Rates and Charges from October 2011 to December 2015 Monthly Billings

As we will discuss in more detail on the next page, much has changed over the past few years concerning water rates in the state of Indiana. On average, water rates and charges have

increased approximately 18% over the last four years. There are a multitude of reasons, including increases in operating expenses, declining customer usage due to conservation and rate fatigue, and the number of capital improvement projects that have been completed over this time frame. The cost of these improvement projects is generally the biggest driver impacting rates and charges. Communities undertake these projects for a

On average, water rates and charges have increased approximately 18% over the last four years.

variety of reasons. Certainly, the relatively low cost of obtaining debt financing has spurred capital spending. In addition, utilities are continually faced with replacing aging infrastructure, unfunded government mandates and regulations as well as the need to increase the capacity of plant facilities to accommodate customer growth.

From October 2011 to December 2015 Monthly Billings

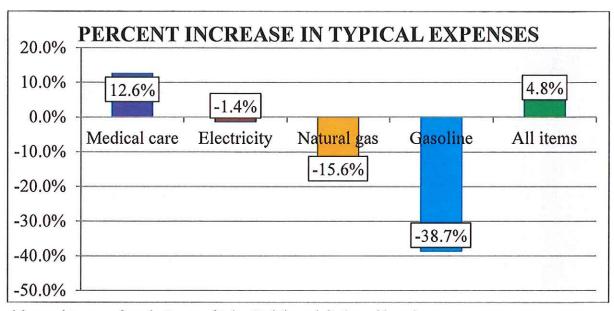
	October	December		
	2011	2015	Percent	
	Average	Average	Increase	
First bracket price (per 1,000 gallons)	\$5.42	\$6.49	19.7%	
Last bracket price (per 1,000 gallons)	\$2.37	\$2.96	24.9%	
Gallons given for minimum price	2,511	2,503	-0.3%	
Minimum charge for 5/8"meter	\$13.71	\$16.24	18.5%	
Minimum charge for 6" meter	\$443.72	\$535.79	20.7%	
Annual charge for 6" sprinkler	\$640.56	\$663.94	3.6%	
Annual charge for 12" sprinkler	\$2,488.89	\$2,705.22	8.7%	
Annual hydrant charge	\$564.58	\$605.07	7.2%	
Monthly bill based on 2,000 gallons usage	\$14.97	\$17.63	17.8%	
Monthly bill based on 3,000 gallons usage	\$18.02	\$21.31	18.3%	
Monthly bill based on 4,000 gallons usage	\$22.35	\$26.47	18.4%	
Monthly bill based on 5,000 gallons usage	\$26.60	\$31.76	19.4%	
Monthly bill based on 10,000 gallons usage	\$47.66	\$56.75	19.1%	

⁼ Approximate single-family residential average.

Comparison of Expenses from August 2011 to December 2015

Since we issued our last Comparative Rate Study in January 2012, the world has seen dramatic changes affecting the day-to-day operations of the communities in which we live. Indiana and the country have mostly recovered from the economic downturn due to the financial market "meltdown" in 2008. Most of the projects funded with grants and low interest loans from the American Recovery and Reinvestment Act of 2009 are now complete.

Local governments are also faced with increases in expenses. For example, communities are continuing to report significant increases in the cost of employee health insurance and normal increases for employee wages which account for a large portion of a utility's operating expenses. Recently we have seen significant decreases in gasoline prices and also a slight reduction in electricity prices this past year after many years of increases over the past 10 years for Indiana communities. These increases -- coupled with the increases associated with improvement projects and decreases in consumption -- have contributed to the 18% increase in water rates and charges throughout the state.



^{*} Source data comes from the Bureau of Labor Statistics website (www.bls.gov).

Schedule of Rate Variances and Averages

The schedule below shows pricing variances of several common rate components. The comparison includes the lowest, average and highest prices as determined from the study data. As expected, there are large variances in what municipal systems charge for water service and fire protection service. These variances are, in part, attributable to factors such as population, geographic location and the number of years the rates have been in effect. Each of these factors will be explored later in this report.

The price per thousand gallons in the first bracket varies from \$.44 to \$37.47 per thousand gallons, approximately 85 times as much as the lowest price. The monthly billing for 4,000 gallons of water, which is often considered to approximate average household usage, varies from a low of \$3.00 per month to a high of \$73.91. In this case, the highest price is over 24 times the lowest price.

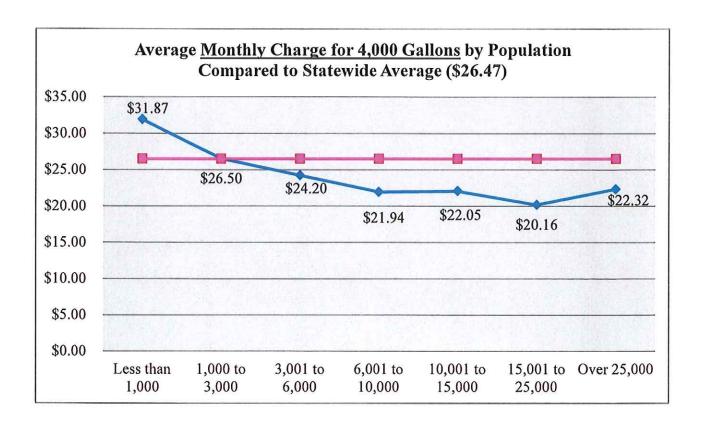
The chart below summarizes our findings for water rate information across the state of Indiana.

	Monthly Billing				
	Minimum	Average	Maximum		
	Charge	Charge	Charge		
First bracket price (per 1,000 gallons)	\$0.44	\$6.49	\$37.47		
Last bracket price (per 1,000 gallons)	\$0.31	\$2.96	\$11.95		
Gallons given for minimum price	1,000	2,503	9,000		
Minimum charge for 5/8"meter	\$3.00	\$16.24	\$46.32		
Minimum charge for 6" meter	\$13.62	\$535.79	\$4,305.00		
Annual charge for 6" sprinkler	\$40.15	\$663.94	\$2,097.50		
Annual charge for 12" sprinkler	\$69.01	\$2,705.22	\$12,986.55		
Annual hydrant charge	\$18.00	\$605.07	\$23,228.00		
Hydrant Surcharge for 5/8"meter	\$0.40	\$3.88	\$9.46		
Monthly Consumption (5/8" Meter):					
2,000 gallons	\$3.00	\$17.63	\$53.60		
3,000 gallons	\$3.00	\$21.31	\$64.91		
4,000 gallons	\$3.00	\$26.47	\$73.91		
5,000 gallons	\$3.00	\$31.76	\$82.91		
10,000 gallons	\$4.40	\$56.75	\$146.25		

Average Statistics by 2010 Population

The graph below shows the correlation between a community's size and its water rates and charges. With relatively few exceptions, charges for water service generally follow a pattern of higher rates in small communities and lower rates in large communities. In addition, the number of gallons allowed for minimum monthly bills follows a similar pattern. Smaller communities tend to offer fewer gallons with their minimum bills while larger communities tend to offer more gallons.

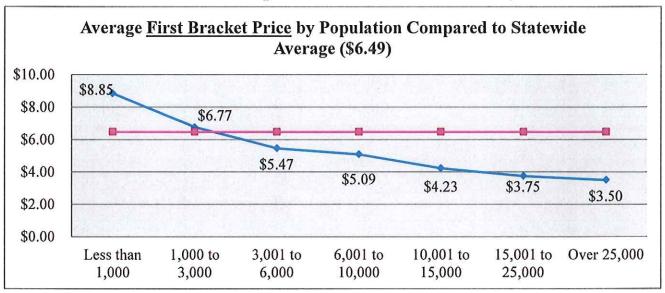
These variations are reasonable when you consider that the cost of operating a utility must be spread over its customer base. A larger customer base means that a smaller portion of the total costs of operation is allocated to each individual customer. In addition, as the volume of water increases, the average cost to treat that water decreases.

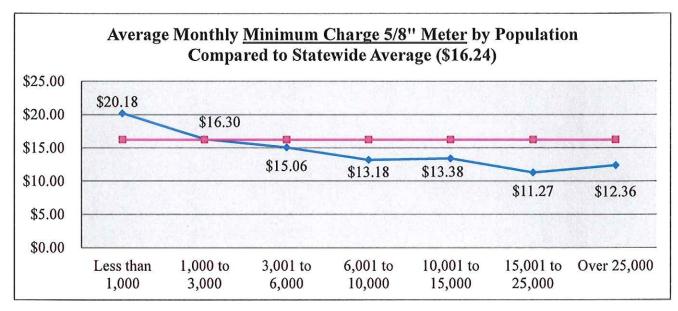


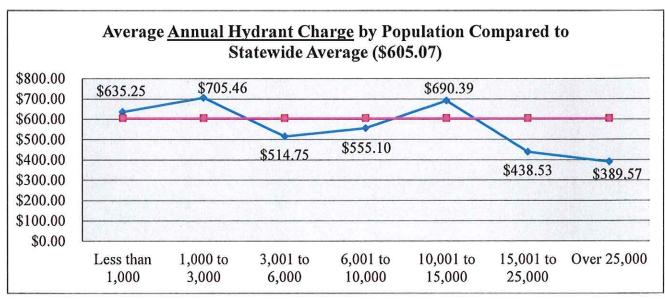
Average Statistics by Muncipality Based on 2010 Population Monthly Billings

		Population					
	Less than 1,000	1,000 to 3,000	3,001 to 6,000	6,001 to 10,000	10,001 to 15,000	15,001 to 25,000	Over 25,000
Municipalities in study group	101	121	34	30	17	19	34
First bracket price (per 1,000 gallons)	\$8.85	\$6.77	\$5.47	\$5.09	\$4.23	\$3.75	\$3.50
Last bracket price (per 1,000 gallons)	\$3.83	\$3.14	\$2.51	\$2.15	\$2.04	\$1.91	\$2.03
Gallons given for minimum price	2,467	2,447	2,621	2,389	2,780	2,950	2,531
Minimum charge for 5/8"meter	\$20.18	\$16.30	\$15.06	\$13.18	\$13.38	\$11.27	\$12.36
Minimum charge for 6" meter	\$575.07	\$594.35	\$469.03	\$618.26	\$609.93	\$394.75	\$356.13
Annual charge for 6" sprinkler	\$677.50	\$646.84	\$634.09	\$619.36	\$957.98	\$653.08	\$610.25
Annual charge for 12" sprinkler	\$2,296.12	\$2,112.01	\$2,327.67	\$2,143.89	\$4,567.77	\$2,620.00	\$2,554.96
Annual hydrant charge	\$635.25	\$705.46	\$514.75	\$555.10	\$690.39	\$438.53	\$389.57
Hydrant Surcharge for 5/8"meter	\$4.54	\$3.53	\$3.59	\$4.16	\$4.59	\$3.52	\$3.82
Monthly bill based on 2,000 gallons usage	\$21.41	\$16.86	\$16.62	\$14.00	\$15.67	\$14.45	\$16.11
Monthly bill based on 3,000 gallons usage	\$25.65	\$21.02	\$19.37	\$17.08	\$18.28	\$16.78	\$19.10
Monthly bill based on 4,000 gallons usage	\$31.87	\$26.50	\$24.20	\$21.94	\$22.05	\$20.16	\$22.32
Monthly bill based on 5,000 gallons usage	\$38.12	\$32.17	\$29.15	\$27.01	\$26.30	\$23.67	\$25.52
Monthly bill based on 10,000 gallons usage	\$67.23	\$58.65	\$52.85	\$50.72	\$47.03	\$41.89	\$41.26

See Graphs on previous and next page.





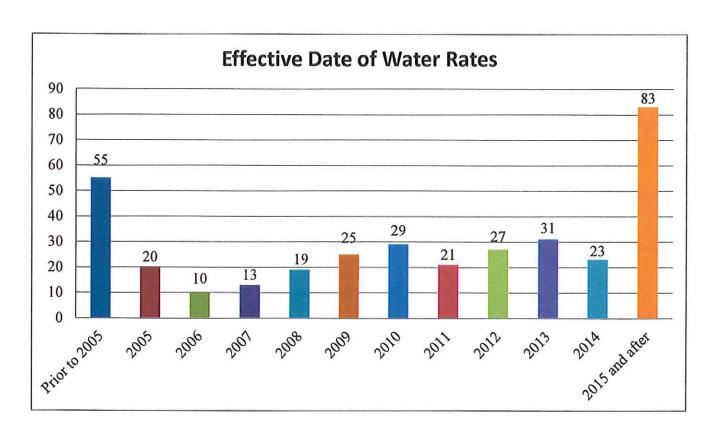


Indiana Comparative Water Rate Study Average Statistics by Effective Date of Current Rates

The following pages examine average charges for service based upon both the current rate structure and size of the community. The first schedule provides statistics for all municipalities sorted by the effective date of the rates adopted.

Fifty five municipalities are using rates adopted prior to 2005, representing approximately 15% of the communities included in this survey.

This is important to note because it indicates these communities will likely experience larger rate adjustments to compensate for normal changes in operating costs that were absorbed over the past 10 years rather than passed on by the utility in the form of minor rate adjustments. Communities should strongly consider an analysis of their rates and charges at least every three to five years.

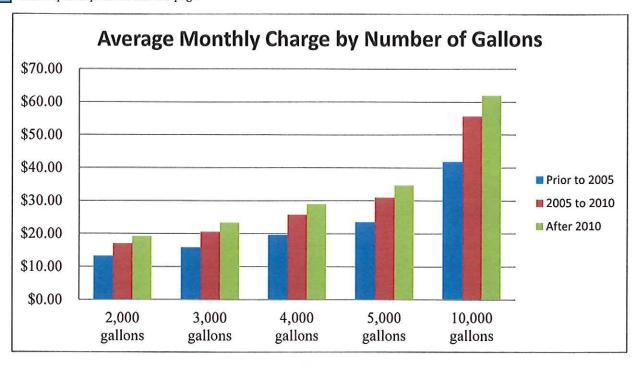


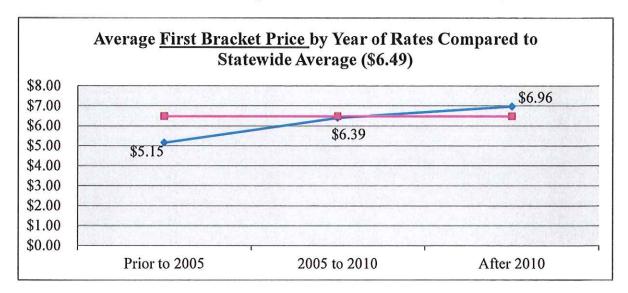
Average Statistics by Effective Date of Current Rates

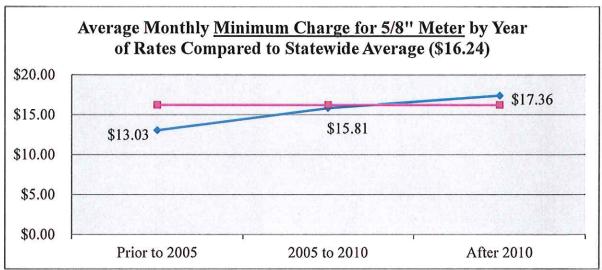
All Populations Monthly Billings

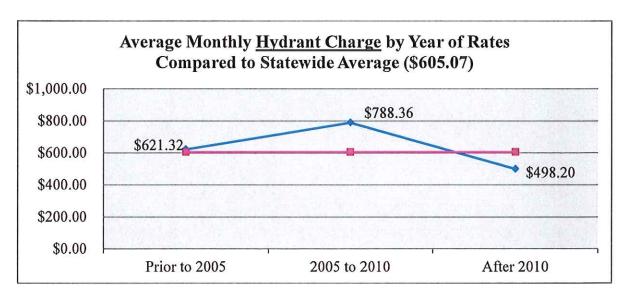
	Year Current Rates Were Effective		
	Prior to	2005 to	After
	2005	2010	2010
Municipalities in study group	55	116	185
First bracket price (per 1,000 gallons)	\$5.15	\$6.39	\$6.96
Last bracket price (per 1,000 gallons)	\$1.94	\$2.99	\$3.26
Gallons given for minimum price	2,624	2,501	2,467
Minimum charge for 5/8"meter	\$13.03	\$15.81	\$17.36
Minimum charge for 6" meter	\$547.90	\$555.15	\$520.06
Annual charge for 6" sprinkler	\$384.36	\$605.84	\$760.00
Annual charge for 12" sprinkler	\$1,039.64	\$2,190.69	\$3,086.16
Annual hydrant charge	\$621.32	\$788.36	\$498.20
Hydrant Surcharge for 5/8"meter	\$4.04	\$2.62	\$4.40
Typical Billings:			i kalisa.
2,000 gallons	\$13.26	\$17.02	\$19.31
3,000 gallons	\$15.86	\$20.56	\$23.39
4,000 gallons	\$19.61	\$25.74	\$28.96
5,000 gallons	\$23.53	\$30.98	\$34.70
10,000 gallons	\$41.82	\$55.60	\$61.91

See Graphs on previous and next page.



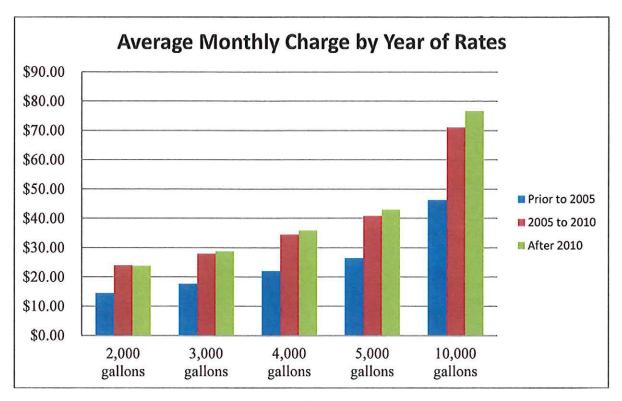






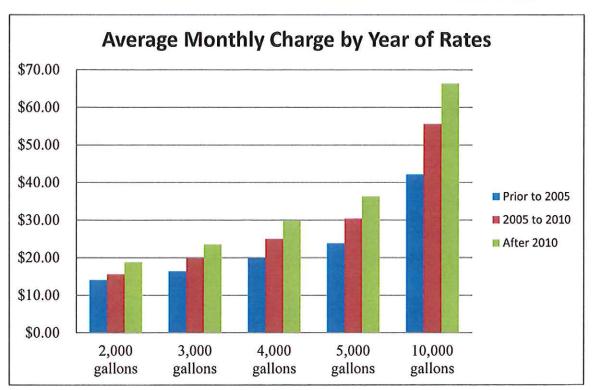
Average Statistics by Effective Date of Current Rates Population Less Than 1,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	26	29	46
First bracket price (per 1,000 gallons)	\$6.45	\$9.03	\$10.10
Last bracket price (per 1,000 gallons)	\$2.12	\$4.34	\$4.48
Gallons given for minimum price	2,270	2,535	2,548
Minimum charge for 5/8"meter	\$13.79	\$21.68	\$22.75
Minimum charge for 6" meter	\$696.80	\$583.63	\$502.54
Annual charge for 6" sprinkler	\$231.20	\$643.37	\$920.69
Annual charge for 12" sprinkler	\$154.00	\$1,787.65	\$2,826.24
Annual hydrant charge	\$967.11	\$645.95	\$494.92
Hydrant Surcharge for 5/8"meter	\$9.46	\$1.02	\$5.08
Typical Billings:			
2,000 gallons	\$14.46	\$23.92	\$23.76
3,000 gallons	\$17.67	\$27.91	\$28.74
4,000 gallons	\$21.96	\$34.44	\$35.85
5,000 gallons	\$26.40	\$40.87	\$43.01
10,000 gallons	\$46.31	\$71.00	\$76.67



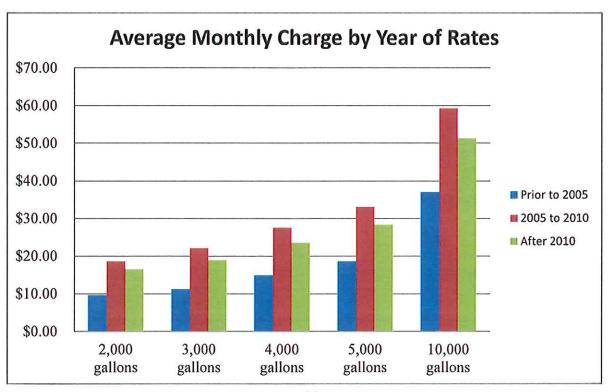
Average Statistics by Effective Date of Current Rates Population 1,000 to 3,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	18	46	57
First bracket price (per 1,000 gallons)	\$4.78	\$6.48	\$7.68
Last bracket price (per 1,000 gallons)	\$2.03	\$2.90	\$3.70
Gallons given for minimum price	3,049	2,462	2,261
Minimum charge for 5/8"meter	\$14.03	\$15.60	\$17.48
Minimum charge for 6" meter	\$299.60	\$590.99	\$679.48
Annual charge for 6" sprinkler	\$477.51	\$580.63	\$753.02
Annual charge for 12" sprinkler	\$583.64	\$1,174.10	\$2,992.02
Annual hydrant charge	\$373.42	\$1,113.71	\$497.70
Hydrant Surcharge for 5/8"meter	\$2.90	\$2.58	\$4.79
Typical Billings:			
2,000 gallons	\$13.99	\$15.59	\$18.79
3,000 gallons	\$16.33	\$19.79	\$23.51
4,000 gallons	\$19.91	\$25.00	\$29.79
5,000 gallons	\$23.75	\$30.36	\$36.28
10,000 gallons	\$42.13	\$55.56	\$66.35



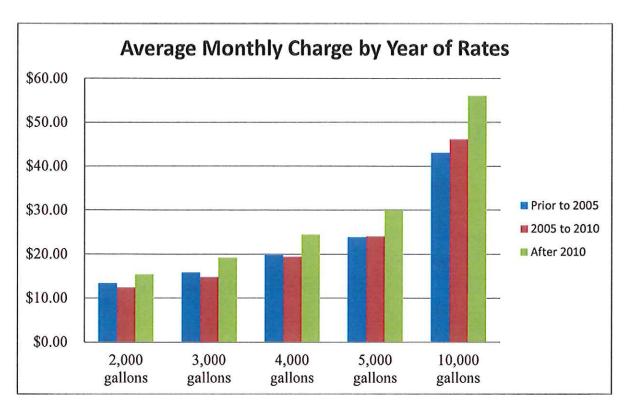
Indiana Comparative Water Rate Study Average Statistics by Effective Date of Current Rates Population 3,001 to 6,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	3	12	19
First bracket price (per 1,000 gallons)	\$3.27	\$6.57	\$5.12
Last bracket price (per 1,000 gallons)	\$1.19	\$3.28	\$2.23
Gallons given for minimum price	2,633	2,521	2,684
Minimum charge for 5/8"meter	\$10.63	\$17.24	\$14.38
Minimum charge for 6" meter	\$757.40	\$433.44	\$456.05
Annual charge for 6" sprinkler	\$357.08	\$577.46	\$721.43
Annual charge for 12" sprinkler	\$1,025.20	\$2,527.83	\$2,390.40
Annual hydrant charge	\$436.78	\$604.15	\$467.91
Hydrant Surcharge for 5/8"meter	\$1.15	\$2.86	\$4.24
Typical Billings:			
2,000 gallons	\$9.60	\$18.59	\$16.48
3,000 gallons	\$11.20	\$22.14	\$18.91
4,000 gallons	\$14.88	\$27.57	\$23.54
5,000 gallons	\$18.57	\$33.06	\$28.36
10,000 gallons	\$36.99	\$59.26	\$51.31



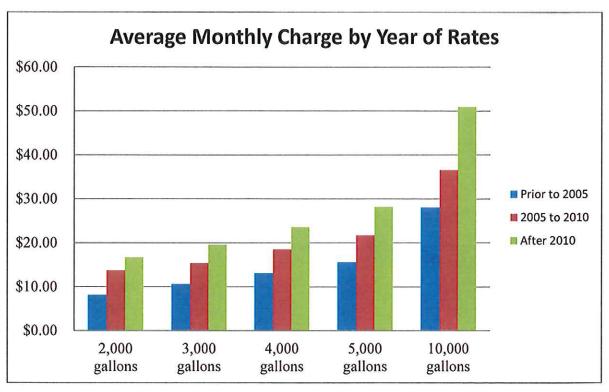
Average Statistics by Effective Date of Current Rates Population 6,001 to 10,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	3	12	15
First bracket price (per 1,000 gallons)	\$3.46	\$4.63	\$5.78
Last bracket price (per 1,000 gallons)	\$1.69	\$1.76	\$2.55
Gallons given for minimum price	2,750	2,489	2,258
Minimum charge for 5/8"meter	\$9.62	\$12.16	\$14.47
Minimum charge for 6" meter	\$776.51	\$685.96	\$552.12
Annual charge for 6" sprinkler	\$629.52	\$620.64	\$616.49
Annual charge for 12" sprinkler	N/A	\$1,606.81	\$2,412.44
Annual hydrant charge	\$331.77	\$585.11	\$562.87
Hydrant Surcharge for 5/8"meter	N/A	\$3.43	\$4.89
Typical Billings:			
2,000 gallons	\$13.38	\$12.41	\$15.39
3,000 gallons	\$15.85	\$14.77	\$19.17
4,000 gallons	\$19.82	\$19.36	\$24.42
5,000 gallons	\$23.80	\$24.03	\$30.03
10,000 gallons	\$43.04	\$46.04	\$55.99



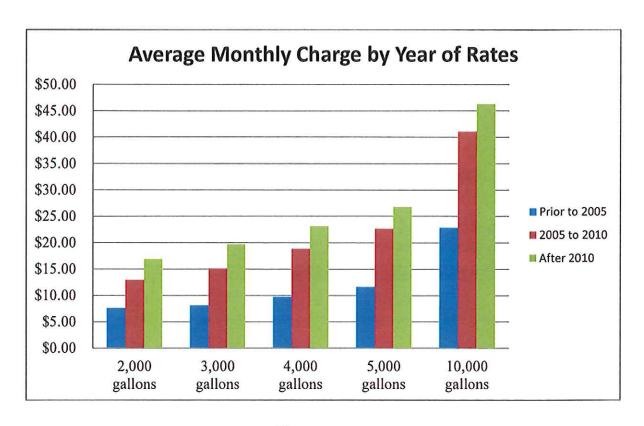
Average Statistics by Effective Date of Current Rates Population 10,001 to 15,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	1	3	13
First bracket price (per 1,000 gallons)	\$2.49	\$3.28	\$4.58
Last bracket price (per 1,000 gallons)	\$1.97	\$1.67	\$2.13
Gallons given for minimum price	N/A	2,813	2,773
Minimum charge for 5/8"meter	N/A	\$10.94	\$14.05
Minimum charge for 6" meter	N/A	\$726.79	\$578.06
Annual charge for 6" sprinkler	\$760.80	\$730.89	\$1,037.84
Annual charge for 12" sprinkler	\$3,043.20	\$3,029.25	\$5,250.00
Annual hydrant charge	\$760.80	\$565.00	\$705.42
Hydrant Surcharge for 5/8"meter	\$6.72	\$3.09	\$4.74
Typical Billings:			
2,000 gallons	\$8.12	\$13.72	\$16.70
3,000 gallons	\$10.61	\$15.34	\$19.55
4,000 gallons	\$13.10	\$18.51	\$23.56
5,000 gallons	\$15.59	\$21.67	\$28.19
10,000 gallons	\$28.04	\$36.59	\$50.91



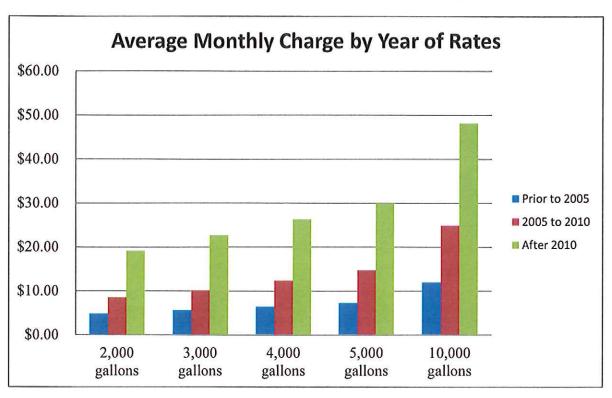
Average Statistics by Effective Date of Current Rates Population 15,001 to 25,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	2	7	10
First bracket price (per 1,000 gallons)	\$2.32	\$3.50	\$4.21
Last bracket price (per 1,000 gallons)	\$1.53	\$2.06	\$1.88
Gallons given for minimum price	3,584	2,793	2,868
Minimum charge for 5/8"meter	\$7.60	\$9.69	\$13.10
Minimum charge for 6" meter	\$284.11	\$409.68	\$406.43
Annual charge for 6" sprinkler	\$179.66	\$721.98	\$699.53
Annual charge for 12" sprinkler	\$562.76	\$3,199.61	\$2,499.88
Annual hydrant charge	\$301.71	\$473.97	\$441.09
Hydrant Surcharge for 5/8"meter	\$1.14	\$3.07	\$4.17
Typical Billings:			
2,000 gallons	\$7.60	\$12.94	\$16.88
3,000 gallons	\$8.13	\$15.09	\$19.70
4,000 gallons	\$9.69	\$18.88	\$23.15
5,000 gallons	\$11.59	\$22.65	\$26.80
10,000 gallons	\$22.83	\$41.05	\$46.30



Average Statistics by Effective Date of Current Rates Population Over 25,000 Monthly Billings

	Year Current Rates Were Effective		
	Prior to 2005	2005 to 2010	After 2010
Municipalities in study group	2	7	25
First bracket price (per 1,000 gallons)	\$1.03	\$2.25	\$4.05
Last bracket price (per 1,000 gallons)	\$0.62	\$1.19	\$2.38
Gallons given for minimum price	N/A	2,292	2,736
Minimum charge for 5/8"meter	\$3.00	\$7.77	\$14.54
Minimum charge for 6" meter	N/A	\$386.88	\$345.88
Annual charge for 6" sprinkler	\$253.46	\$430.96	\$683.43
Annual charge for 12" sprinkler	\$869.04	\$1,653.11	\$2,881.02
Annual hydrant charge	\$289.65	\$380.90	\$395.69
Hydrant Surcharge for 5/8"meter	N/A	\$2.21	\$4.06
Typical Billings:			
2,000 gallons	\$4.80	\$8.55	\$19.13
3,000 gallons	\$5.61	\$10.17	\$22.67
4,000 gallons	\$6.41	\$12.38	\$26.37
5,000 gallons	\$7.22	\$14.72	\$30.01
10,000 gallons	\$11.94	\$24.86	\$48.20



About Umbaugh

Umbaugh is now in its seventh decade of providing municipal advisory services to local governments, municipal and not-for-profit utilities, school corporations, libraries and a variety of other governmental clients. Our firm has constantly grown to meet this demand and changed with the increasing complexities of public financing, but we remain committed to our initial vision of personal attention, integrity and providing high quality service to each client.

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